

CLAIMS

What is claimed is:

1. An in line skate guard for an in line skate, said in line skate comprising a boot and a frame having a bottom surface and adapted for carrying a plurality of serially mounted rollers, said plurality of serially mounted rollers including a first roller and a last roller, wherein each of said plurality of rollers has a first width and a second circumferential arcuate taper for contacting a contact surface, and wherein the in line skate includes a brake spur, said in line skate guard comprising an elongate body comprising:
 - a. a length;
 - b. a front portion having a first width, said front portion including opposite and parallel first and second lugs projecting upwards;
 - c. a rear portion having a second width wider than said first width, said rear portion including opposite and parallel third and fourth lugs projecting upwards; and,
 - d. a middle portion having a third width equal to the first width, the middle portion having a groove comprising a first groove width and a second groove width.
2. The in line skate guard as claimed in claim 1 wherein said elongate body further includes a bottom surface adapted for purchase on said contact surface; said bottom surface comprising:

- a. a first contact plane having an angle of approximately 45 degrees to the contact surface;
 - b. a second contact plane having a slightly elevated angle above the contact surface;
 - c. a third horizontal contact plane;
 - d. a fourth contact plane having a slightly elevated angle above the contact surface; and,
 - e. a fifth contact plane having an angle of approximately 45 degrees to the contact surface.
3. The in line skate guard as claimed in claim 2 wherein said first and second opposite and parallel lugs define a first front gap between them.
4. The in line skate guard as claimed in claim 3 wherein said third and fourth opposite and parallel lugs define a second rear gap said rear gap adapted in width to receive said brake spur.
5. The in line skate guard as claimed in claim 4, wherein the elongate body has an upper surface and a groove within said upper surface, said groove adapted to receive the plurality of serially mounted rollers in a pinching relationship, wherein the groove defined by:
 - a. a first wall having a top surface, an inside surface and an outside surface; and,
 - b. a second wall having a top surface, an inside surface and an outside surface;

wherein said first wall and said second wall are adapted to flex outwards when the plurality of serially mounted rollers are inserted between them and in consequence hold the plurality of serially mounted rollers within the groove in a pinching relationship.

6. The in line skate guard as claimed in claim 5, wherein the groove further includes:
 - a. a bottom surface adapted to engage each of the plurality of serially mounted rollers in a supporting relationship;
 - b. a first groove width adapted to receive in a pinching relationship said first width of each of the plurality of serially mounted rollers;
 - c. a second groove width narrower than said first width; and,
 - d. a beveled portion transitioning between said first groove width and said second groove width said beveled portion adapted to receive in a pinching relationship said circumferential arcuate taper of each of the plurality of serially mounted rollers.
7. The in line skate guard as claimed in claim 6, wherein the groove further includes:
 - a. a front curvilinear bight curving front wards and upwards into the first front gap to conform to the first roller;
 - b. a rear curvilinear bight curving rearwards and upwards into said rear gap to conform to the last roller; and,

- c. a depth so that when the in line skate guard is fastened to the in line skate, the top surfaces of the first wall and the second walls respectively abut against the bottom surface of the frame.

8. The in line skate guard as claimed in claim 7 further comprising means for securing the elongate body to the plurality of serially mounted rollers, said means comprising:

a. in the front portion:

- i. a first aperture in the first lug;
- ii. a second aperture in the second lug;

wherein said first and second apertures include a countersunk portion on the inside walls of the first and second lugs respectively;

b. in the rear portion:

- i. a third aperture in the third lug;
- ii. a fourth aperture in the fourth lug;

wherein said third and fourth aperture include a countersunk portion on the inside walls of the third and fourth lugs respectively;

c. a first semi-circular pivot hoop having a first apex, said first semi circular pivot hoop mounted between the first lug and the second lug by first mounting means; and,

d. a second semi-circular pivot hoop having a second apex, said second semi circular pivot hoop mounted between the third lug and the fourth lug by second mounting means.

9. The in line skate guard as claimed in claim 8 wherein said semi circular first pivot hoop has a radius sufficient to permit said first apex to situate on top of the first roller.
10. The in line skate guard as claimed in claim 9 wherein said semi circular second pivot hoop has a radius sufficient to permit said second apex to situate on top of the in line skate brake spur, and where the in line skate brake spur is absent, said semi circular second pivot hoop has a radius sufficient to permit said second apex to situate on top of the in line skate last roller.
11. The in line skate as claimed in claim 10, wherein said first mounting means comprises a first and a second sleeve inserted into the first lug aperture and second lug apertures respectively, wherein each of the first and second sleeves include a first end and a second end, said first and second sleeves second end adapted in shape to conform to the countersunk portion of the first and second lug apertures, the first and second sleeve second ends slightly recessed in the first and second aperture inside end.
12. The in line skate as claimed in claim 11, said second mounting means comprises a third and a fourth sleeve located within the rear portion third and fourth lug apertures respectively, wherein each of the third and fourth sleeves includes a first end and a second end wherein said third and fourth sleeves second ends are adapted in shape to conform to the countersunk portion of the third and fourth lug

apertures, the first and second sleeve ends of the third and fourth sleeves slightly recessed in the aperture inside end.

13. The in line skate guard as claimed in claim 12, wherein said means for securing the elongate body to the plurality of rollers further comprises:
 - a. a first and a second tension chord, wherein each of said first and second tension chords have:
 - i. a first relaxed length less than the length of the elongate body;
 - ii. a second stretched length less than the length of the elongate body;
 - iii. a first end fixed to which is an eye ring, wherein said first tension chord eye ring is engaged in a sliding relationship with the first semi circular pivot hoop and wherein said second tension chord eye ring is engaged in a sliding relationship with the second semi circular pivot hoop;
 - iv. a second end fixed to which is a clip, wherein said first tension chord clip is adapted for releasable engagement with the second semi circular hoop and wherein said second tension chord clip is adapted for releasable engagement with the first semi circular hoop;

so that when the first and second clips are engaged with their respective first and second semi-circular hoops, the first and second tension chord assume their second stretched lengths.

14. The inline skate guard as claimed in claim 13 wherein the first tension chord and said second tension have identical construction.
15. The in line skate as claimed in claim 14 wherein the first and the second semi circular pivot hoops are fabricated from piano wire.
16. An in line skate guard for an in line stake, said in line skate guard adapted to permit the wearer to walk on a walking surface using a natural human walking gait cycle, said natural human walking gait cycle comprising a heel strike phase, a transition phase from the heel strike phase to a foot flat phase, a foot flat phase, a transition phase between the foot flat phase and the heel off phase, a heel off phase and a toe off phase, said in line skate guard comprising an elongate body having a bottom surface, said bottom surface comprising a plurality of integral contact planes in a serial and contiguous relationship, said contact planes including:
 - a. a first contact plane adapted to contact said walking surface during said heel strike phase;
 - b. a second contact plane adapted to contact the walking surface during said transition phase between the foot flat phase and the heel off phase;
 - c. a third contact plane adapted to contact the walking surface during said foot flat phase;
 - d. a fourth contact plane adapted to contact the walking surface during the transition phase between the foot flat phase and the toe off phase; and,

- e. a fifth contact surface adapted to contact the walking surface during the toe off phase.
17. The in line skate guard as claimed in claim 16 wherein:
- a. said first contact plane is raised approximately 45 degrees from the horizontal; and, wherein,
 - b. said fifth contact plane is raised approximately 45 degrees from the horizontal.
18. In an in line skate guard adapted to fit over a plurality of serially mounted rollers of an in line skate said serially mounted rollers having variable lengths, said in line skate guard comprising an elongate body having a front portion, a middle portion and a rear portion, a method of making said elongate body comprising the steps of:
- a. making a first mold adapted to the shape of said front portion wherein the shape of the front portion is fixed;
 - b. making a second mold adapted to the shape of said rear portion wherein the shape of the rear front portion is fixed;
 - c. making a third mold adapted to the shape of the said middle portion wherein the shape of the middle portion is variable to accommodate said variable lengths of serially mounted rollers;
 - d. joining said first, second and third molds to make a complete mold of said elongate body; and,

e. injecting suitable mold material into said mold,

wherein the resulting elongate body is free of visible seams between the front, middle and rear portions.